

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-190245

(43)Date of publication of application : 23.07.1996

(51)Int.Cl.

G03G 15/01

G03G 21/18

G03G 15/08

(21)Application number : 07-003270

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(22)Date of filing : 12.01.1995

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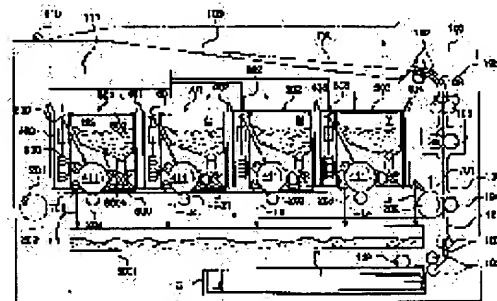
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(54) IMAGE FORMING DEVICE

(57)Abstract:

PURPOSE: To facilitate the exchange of image forming process units and the supply of toner by attaching/detaching plural image forming process units in the direction away from a transfer body, with respect to a belt-like formed transfer body.

CONSTITUTION: Plural image exposing devices 300-303 and image forming process units 500-503 which are alternately provided in parallel, toner images formed on a photoreceptor drum 411 by the plural image exposing devices 300-303 and the image forming process units 500-503 respectively are successively superimposed on the belt-like formed transfer body 200, to form an image and then, it is transferred to a recording medium P. When the plural image forming process units 500-503 are attached to/detached from an image forming device 100, the plural process units 500-503 are provided to attach/detach in the direction away from the transfer body P, with respect to the belt-like formed transfer body 200. Therefore, the supply of the toner of a developing device 600 and the attachment to/detachment from the image forming device 100 is easily attained.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]

[Claim 1] It has two or more image exposure meanses, this image exposure means, and two or more process units for image formation installed by turns. Two or more image exposure meanses, The toner image respectively formed in the aforementioned image support by the image formation process unit In the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture Image formation equipment characterized by preparing so that it may detach and attach in the direction which estranges two or more aforementioned image formation process units from image formation equipment to the aforementioned imprint object to the imprint object formed in the shape of [aforementioned] a belt when detaching and attaching two or more aforementioned process units for image formation.

[Claim 2] Image formation equipment according to claim 1 characterized by preparing so that two or more aforementioned image exposure meanses and the upper part of two or more image formation process units may be opened wide and two or more of these image formation process units may be estranged to the aforementioned imprint object by having enabled movement of the manuscript reader prepared in the aforementioned image formation equipment from the aforementioned image formation position.

[Claim 3] Image formation equipment according to claim 1 characterized by having stretched horizontally the imprint object formed in the shape of [aforementioned] a belt by the suspension member, and preparing two or more aforementioned image exposure meanses and two or more image formation process units in accordance with the aforementioned imprint object.

[Claim 4] Image formation equipment according to claim 1 characterized by the bird clapper from two or more image exposure meanses arranged lengthwise in accordance with the imprint object formed in the shape of [which was stretched to abbreviation lengthwise / aforementioned] a belt, and the aforementioned imprint object by the aforementioned suspension member, and two or more image formation process units.

[Claim 5] Image formation equipment according to claim 1 characterized by the bird clapper from the imprint object formed in the shape of which was inclined and stretched by the aforementioned suspension member / aforementioned] a belt, two or more image exposure meanses by which inclination arrangement was carried out in accordance with the aforementioned imprint object, and two or more image formation process units.

[Claim 6] Image formation equipment which has two or more process units for image formation which installed by turns two or more image exposure meanses characterized by providing the following, and this image exposure means, lays the toner image respectively formed in the aforementioned image support by two or more image exposure meanses and image formation process units on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture A cleaning means to clean the image support of two or more aforementioned process units for image formation A cleaning means to clean the aforementioned imprint object formed in the shape of a belt A common recovery means to collect the toners cleaned by the aforementioned cleaning means after imprinting the aforementioned toner picture

[Claim 7] It has two or more image exposure meanses, this image exposure means, and the process unit for image formation installed by turns. Two or more image exposure meanses, The toner image respectively formed in the aforementioned image support by the aforementioned process unit for image formation While arranging in the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture in the lower position of the imprint object which formed two or more aforementioned process units for image formation in the shape of [aforementioned] a belt Image formation equipment characterized by having enabled movement of the imprint object formed in the shape of [which carried out suspension by the suspension member / aforementioned] a belt from the image formation position, and making removable two or more aforementioned process units for image formation at least than image formation equipment.

[Claim 8] Image formation equipment according to claim 7 characterized by having made the aforementioned imprint object movable with the manuscript reader prepared in image formation equipment, and making removable two or more aforementioned process units for image formation at least than image formation equipment.

[Claim 9] Two or more aforementioned process units for image formation are image formation equipment given in any 1 term of the claims 1-8 characterized by being a process unit for color picture formation.

[Claim 10] Two or more aforementioned image exposure meanses and two or more image formation process units are image formation equipment given in any 1 term of the claims 1-8 characterized by being respectively held by the guidance maintenance means prepared in image formation equipment in the predetermined position.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates in image-formation equipment to the image-formation equipment which was the aforementioned image aligner and image-formation equipment which imprints the picture formed in the aforementioned image support of the process unit for image formation on an imprint object, and imprints the aforementioned picture on the recording paper from this imprint object further while forming the picture in the image support by the process unit for image formation with the image aligner, and was improved in order to make the process unit for image formation detach and attach simply from the aforementioned imprint object.

[0002]

[Description of the Prior Art] It is respectively arranged in order of an electrification machine, the aligner for latent-image formation, a developer, an imprint machine, and cleaning equipment to the image support which has the shape of a photo conductor of the shape of a belt by which suspension was carried out to the suspension member which can be rotated focusing on two or more image supports (henceforth a photo conductor drum). And the composition which each part material arranged centering on the aforementioned photo conductor drum puts a development counter in order, and is arranged is known for JP,3-77940,U, JP,3-77941,U, etc. With the aforementioned composition, generally it is used for color picture formation, an electrification machine, and a developer and cleaning equipment were constituted from one image formation process unit to the aforementioned photo conductor drum, and, in the case of the printer, the aligner for latent-image formation which built in the polygon mirror, ftheta lens, the reflective mirror, etc. by using a semiconductor laser emitter as the light source is separately prepared in the up position corresponding to the process unit for image formation which has each of this color toner. Furthermore, in the case of the reproducing unit, the manuscript reader is arranged at the upper part of the aforementioned aligner for latent-image formation.

[0003]

[Problem(s) to be Solved by the Invention] When supplying a toner to the developer in each process unit for image formation, no image formation equipment constituted as mentioned above moves to the side the image aligner for latent-image formation prepared in the upper part of the process unit for image formation from an up position, opens the opening of the toner of the aforementioned developer wide, and if there is, it does not have an oak. Moreover, when detaching and attaching the process unit for image formation from the main part of image formation equipment by exchange of a photo conductor drum etc., it is necessary to move the image aligner for the aforementioned latent-image formation like the above, or to remove. Then, when exposing a photo conductor drum by the image aligner for the aforementioned latent-image formation, in order to make image formation of an image formation side exact, it is constituted so that strict alignment can be performed. If the image aligner for the aforementioned latent-image formation is moved from image formation equipment as mentioned above or it is removing, an error will arise in alignment, the focus of a picture goes wrong, and it becomes impossible however, to form an exact picture. Furthermore, doing the work which moves the aforementioned aforementioned aligner for latent-image formation at the time of the above toner supply of a developer and exchange of a photo conductor drum, or is removed must interrupt record or copy work for a long time, and it reduces the efficiency of record or copy work remarkably.

[0004] this invention is considered especially in order to improve the aforementioned fault. That is, they are also the purpose and the bottom about making easy exchange of the process unit for image formation which built exchange of each image aligner, a photo conductor drum, a developer, etc. in the image support which formed respectively the process unit for image formation which built in the image aligner for latent-image formation, a photo conductor drum, a developer, etc. in the shape of a belt by carrying out side-by-side installation arrangement, and supply of a toner.

[0005]

[Means for Solving the Problem] In a claim 1, it has two or more image exposure meanses, this image exposure means, and two or more process units for image formation installed by turns for the aforementioned purpose. Two or more image exposure meanses, The toner image respectively formed in the aforementioned image support by the image formation process unit In the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture It prepared so that it might detach and attach in the direction which estranges two or more aforementioned image formation process units from image formation equipment to the aforementioned imprint object to the imprint object formed in the shape of [aforementioned] a belt when detaching and attaching two or more aforementioned process units for image formation. It prepared so that two or more aforementioned image exposure meanses and the upper part of two or more image formation process units might be opened wide and two or more of these image formation process units might be estranged to the aforementioned imprint object by having enabled movement of the manuscript reader prepared in the aforementioned image formation equipment from the aforementioned image formation position in the claim 2. In the claim 3, the imprint object formed in the shape of [aforementioned] a belt was horizontally stretched by the suspension member, and two or more aforementioned image exposure meanses and two or more image formation process units were prepared in accordance with the aforementioned imprint object. It is a bird clapper from the imprint object formed in the claim 4 in the shape of [which was stretched to abbreviation lengthwise by the aforementioned suspension member / aforementioned] a belt, two or more image exposure meanses arranged in accordance with the aforementioned imprint object lengthwise, and two or more image formation process units. It is a bird clapper from the imprint object formed in

the shape of [which was inclined and stretched by the aforementioned suspension member in the claim 6, /aforementioned] a belt, and two or more image exposure means by which inclination arrangement was carried out in accordance with the aforementioned imprint object, and two or more image formation process units. In a claim 6, it has two or more process units for image formation which installed two or more image exposure means and this image exposure means by turns. Two or more image exposure means, The toner image respectively formed in the aforementioned image support by the image formation process unit A cleaning means to clean the image support of two or more aforementioned process units for image formation in the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture, Have a cleaning means to clean the aforementioned imprint object formed in the shape of a belt, and a common recovery means to collect the toners cleaned by the aforementioned cleaning means after imprinting the aforementioned toner picture. In a claim 7, it has two or more image exposure means, this image exposure means, and the process unit for image formation installed by turns. Two or more image exposure means, The toner image respectively formed in the aforementioned image support by the aforementioned process unit for image formation While arranging in the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture in the lower position of the imprint object which formed two or more aforementioned process units for image formation in the shape of [aforementioned] a belt Movement of the imprint object formed in the shape of [which carried out suspension by the suspension member / aforementioned] a belt was enabled from the image formation position, and two or more aforementioned process units for image formation were made removable at least than image formation equipment. In the claim 8, the aforementioned imprint object was made movable with the manuscript reader prepared in image formation equipment, and two or more aforementioned process units for image formation were made removable at least than image formation equipment. In a claim 9, two or more aforementioned process units for image formation should be process units for color picture formation. In a claim 10, two or more aforementioned image exposure means and two or more image formation process units are attained by being respectively held by the guidance maintenance means prepared in image formation equipment in the predetermined position.

[0006]

[Example] The example of this invention is explained using drawing with the operation.

[0007] Drawing 1 is one example of this invention, for example, shows the image formation equipment 100 of a color printer. In order for 300,301,302,303 to be a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively and to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK) in drawing, the process unit 500,501,502,503 for image formation is formed so that it may install with the aforementioned image exposure means 300,301,302,303. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- in accordance with the belt-like imprint object 200 which carried out suspension horizontally to the member 201,202, it installs by turns like illustration and prepares As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that it may be installed by the photo conductor drum 411, and may be exposed from the image exposure means 300 and an electrostatic latent image may be formed. By the guidance attachment components 400 and 401,402,403,404, although the aforementioned image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500,501,502,503 for image formation is formed. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0008] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 503 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a cyano toner (C) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the Magenta toner image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the developer 600 and the aforementioned process unit 500 for image formation forms a black toner (BK) image in the 200th page of a belt-like imprint object by the same operation as the above.

[0009] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- reversal operation -- carrying out -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of the aforementioned abandonment toner bottle 5001, paper is fed with the feed roller 102 which feeds paper to the topmost recording paper P, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104

[0010] Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned

color picture, it is delivered to the delivery tray 109 as the recording paper PA with the conveyance roller 106 and the delivery roller 107. [0011] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0012] Moreover, the aforementioned delivery tray 109 is formed possible [opening] by the pivot 110 prepared in some image formation equipments 100, and it is opening this delivery tray 109, and it becomes possible to open the upper part of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). Toner supply can be easily performed by opening the lid 800 formed in the toner compartment of the developer 600 prepared in the process unit 500,501,502,503 for image formation. Furthermore, it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation simply through the guidance attachment component 401,402,403,404, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0013] The abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand is discarded by the common abandonment toner bottle 5001 through the abandonment toner guidance ways L1, L2, L3, L4, and L5.

[0014] Drawing 2 is one example of this invention, for example, shows the image formation equipment 112 of a reproducing unit. Like drawing 1, 300,301,302,303 is a semiconductor laser emitter, a polygon mirror and theta lens, and the image exposure means that built in the reflective mirror respectively, and in order to perform development of yellow (Y), a Magenta (M), cyanogen (C), and black (BK), the process unit 500,501,502,503 for image formation is formed so that it may install with the aforementioned image exposure means 300,301,302,303. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- in accordance with the belt-like imprint object 200 which carried out suspension horizontally to the member 201,202, it installs by turns like illustration and prepares As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that it may be installed by the photo conductor drum 411, and may be exposed from the image exposure means 300 and an electrostatic latent image may be formed. By the guidance attachment components 400 and 401,402,403,404, although the image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500,501,502,503 for image formation is formed. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0015] Furthermore, the exposure section 113 which established the manuscript base 117 in this example at the upper part of image formation equipment 112, and formed respectively the photo detectors 116, such as the exposure lamp 114 which exposes a manuscript, the optical system 115 including the mirror, and CCD which receives a manuscript image, prepares, is carried out, and is prepared possible [opening] by the pivot 1131 by the end of image formation equipment 112.

[0016] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The color manuscript D on the manuscript base 117 is first exposed one by one with the exposure lamp 114, image information is inputted into a photo detector 116 through optical system 115, and the aforementioned image information is further inputted into an input unit 111. Moreover, the electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 503 for image formation which develops a yellow toner (Y) simultaneously, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 currently controlled by the picture signal of the aforementioned input unit 111 which next receives the aforementioned image information, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 501,500 for image formation which has a cyano toner (C) and a black toner (BK) by image information by the operation as the above that next it is the same, A black toner (BK) image is imprinted by heavy doubling ***** 203 so that it may agree in the toner image formed in the aforementioned belt-like imprint object 200. In addition, it is cleaned with cleaning equipment 700 one by one with the photo conductor drum 411 which ended the imprint of a picture on the aforementioned belt-like imprint object 200.

[0017] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- reversal operation -- carrying out -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassettes C, C1, and C2 having the recording papers P, P1, and P2 are formed in the lower position of the aforementioned abandonment toner bottle 5001. Paper is fed with the feed rollers 102, 1021, and 1022 which feed paper to the topmost recording papers P, P1, and P2 according to the size of Manuscript D, and the size of hope. As for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arresters 1032, 1033, and 1034 at the detail-paper-guide section 108. the aforementioned recording paper once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1091 as the recording paper PA with the conveyance roller 106 and the delivery roller 107.

[0018] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0019] this example is opening the exposure section 113 focusing on a pivot 1131, and it becomes possible to open the opposite part of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). Toner supply can be easily performed by opening the lid 800 formed in the toner compartment of the developer 600 prepared in the process unit 500,501,502,503 for image formation. furthermore -- ** -- it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation simply through the guidance attachment component 401,402,403,404, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly

[0020] The abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand is discarded by the common abandonment toner bottle 5001 through the abandonment toner guidance ways L1, L2, L3, L4, and L5.

[0021] Drawing 3 is what formed the Light Emitting Diode emitter 3001 as an image exposure means 300, and when detaching and attaching image exposure means 300 main part which formed [the end of the Light Emitting Diode emitter 3001 was prepared free / rotation / with the shaft 3002 to image exposure means 300 main part, and fixed / towards the 411st page of a photo conductor drum / at the time of use like illustration] the process unit 500 for image formation, or the Light Emitting Diode emitter 3001 to image formation equipment 100, it is contained in the position of an alternate long and short dash line.

[0022] Drawing 4 is other one example of this invention, for example, shows the image formation equipment 118 of a color printer. the suspension to which especially this invention rotates the image exposure means 300,301,302,303 and the process unit 500,501,502,503 for image formation -- it inclines to a member 201,202, and in accordance with the belt-like imprint object 200 which carried out suspension, it inclines by turns like illustration, and is installed in lengthwise side by side in piles Like drawing 1 , 300,301,302,303 is a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively, and in order to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK), the process unit 500,501,502,503 for image formation is formed so that it may incline with the aforementioned image exposure means 300,301,302,303 and may install. As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the upper position and an electrostatic latent image may be formed. By the guidance attachment components 400, 401, 402, 403, 404, and 405,406,407,408, although the aforementioned image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position, and it lays and maintenance fixation of them is carried out.

[0023] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200 which carried out inclination arrangement. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 500 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 300 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image and black toner (BK) image which were formed in the photo conductor drum 411 of the process unit 501,503 for image formation which has a cyano toner (C) and a black toner (BK) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the Magenta toner (M) image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the developer 600 and the aforementioned process unit 503 for image formation forms a black toner (BK) image in the 200th page of a belt-like imprint object by the same operation as the above.

[0024] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of image formation equipment 118, paper is fed with the feed roller 102 which feeds paper to the topmost recording paper P, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1181 as the recording paper PA with the delivery roller 107.

[0025] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, it is reversed, and a new picture imprint is performed.

[0026] Moreover, the open door 1182 is formed in some image formation equipments 118 possible [opening] by the pivot 1183, and it becomes possible to open the side of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). It is possible to supply the aforementioned toner to the process unit 500,501,502,503 for image formation by which inclination arrangement was carried out in the arranged position. Furthermore, a toner compartment can be wide opened by pulling out a developer 600 and the aforementioned process unit 500,501,502,503 for image formation along with the aforementioned guidance attachment component 402,404,406,408, and toner supply can be performed easily. Furthermore, it is possible to guide the aforementioned process unit 500,501,502,503 for image formation by the guidance attachment components 401, 402, 403, 404, and 405,406,407,408, and to detach and attach it simply, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0027] Moreover, this example carried out inclination arrangement of the belt-like imprint object 200, and since it had arranged cleaning equipment 701 using this inclination, it has improved the cleaning performance sharply.

[0028] Drawing 5 is other one example of this invention, for example, shows the image formation equipment 119 of a color printer in order to form a color picture. In order for 300,301,302,303 to be a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively and to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK) in drawing, the process unit 500,501,502,503 for image formation is formed in the aforementioned image exposure means 300,301,302,303 and lengthwise. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- it is prepared by turns in the state where it put in accordance with the belt-like imprint object 200 which carried out suspension to lengthwise to the member 201,202 As the process unit 500 for image formation shows like drawing 1, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the upper part and an electrostatic latent image may be formed. By the guidance attachment components 400, 401, 402, 403, 404, and 405,406,407,408, although the aforementioned image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500,501,502,503 for image formation is formed in the lower position of image formation equipment 119. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0029] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 503 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a cyano toner (C) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the Magenta toner (M) image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the aforementioned process unit 500 for image formation at the developer 600, and a black toner (BK) image is formed in the 200th page of a belt-like imprint object by the same operation as the above.

[0030] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- moving -- a color picture -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the upper position of image formation equipment 119, paper is fed to the topmost recording paper P with the feed roller 102, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1191 as the recording paper PA with the delivery roller 107.

[0031] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0032] Moreover, the open door 1192 is formed in some aforementioned image formation equipments 119 possible [opening] by the pivot 1191, and it becomes possible by opening this open door 1192 to open the upper part about the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). The process unit 500,501,502,503 for image formation can be made to be able to show around by the guidance attachment component 402,404,406,408, it can pull out to the side, and toner supply can be performed easily [the toner compartment of a developer 600]. Furthermore, it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation simply through the guidance attachment components 401, 402, 403, and 404,406,407,408 separately, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0033] Drawing 6 discarded by the common abandonment toner bottle 5001 which formed the abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand in the lower position of image formation equipment 119 through the abandonment toner guidance ways L1, L2, L3, L4, and L5 is other one example of this invention, for example, the image formation equipment 120 of a color printer is shown. In order for 300,301,302,303 to be a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively and to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK) in drawing, the process unit 500,501,502,503 for image formation is formed in the aforementioned image exposure means 300,301,302,303 and lengthwise like drawing 5. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- it is prepared by turns in the state where it put in accordance with the belt-like imprint object 200 which carried out suspension to lengthwise to the member 201,202 As the process unit 500 for image formation shows like drawing 1, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that the photo conductor drum 411 may be exposed from

the image exposure means 300 prepared in the upper part and an electrostatic latent image may be formed. By the guidance establishment web.cgi_eije components 400, 401, 402, 403, 404, and 405, 406, 407, 408, although the aforementioned image exposure means 300, 301, 302, 303 constituted as mentioned above and the process unit 500, 501, 502, 503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500, 501, 502, 503 for image formation is formed in the lower position of image formation equipment 119. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0034] A color picture is formed with the image exposure means 300, 301, 302, 303 constituted as mentioned above, and the process unit 500, 501, 502, 503 for image formation and the belt-like imprint object 200. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 500 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a Magenta toner (M) by image information by the same operation as the above. It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 502, 503 for image formation which has a cyano toner (C) and a black toner (BK) by image information by the operation as the above that next it is the same, A black toner (BK) image is imprinted by heavy doubling ***** 203 so that it may agree in the toner image formed in the aforementioned belt-like imprint object 200.

[0035] Furthermore, the black toner (BK) is contained by the aforementioned process unit 500 for image formation at the developer 600, and a black toner (BK) image is formed in the 200th page of a belt-like imprint object by the same operation as the above.

[0036] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201, 202 -- moving -- a color picture -- a recording paper imprint -- a member -- it moves in the 104 direction. On the other hand, the feed cassette C having the recording paper P is formed in the lower position of image formation equipment 119, paper is fed to the topmost recording paper P with the feed roller 102, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104. Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1191 as the recording paper PA with the delivery roller 107.

[0037] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0038] Moreover, the open door 1202 is formed in some aforementioned image formation equipments 120 possible [opening] by the pivot 1203, and it becomes possible by opening this open door 1202 to open the upper part about the process unit 500, 501, 502, 503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). The process unit 500, 501, 502, 503 for image formation can be made to be able to show around by the guidance attachment component 402, 404, 406, 408, it can pull out to the side, and toner supply can be performed easily [the toner compartment of a developer 600]. Furthermore, it is possible to detach and attach the aforementioned process unit 500, 501, 502, 503 for image formation simply through the guidance attachment components 401, 402, 403, and 404, 406, 407, 408 separately, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0039] Drawing 7 discarded by the common abandonment toner bottle 5001 which formed the abandonment toner discharged from the aforementioned cleaning equipment 700, 701 on the other hand in the lower position of image formation equipment 120 through the abandonment toner guidance ways L1, L2, L3, L4, and L5 is other examples of this invention, for example, the image formation equipment 121 of a reproducing unit is shown. Like drawing 1, in order to perform development of yellow (Y), a Magenta (M), cyanogen (C), and black (BK), 300, 301, 302, 303 is the image exposure means which built in the reflective mirror respectively, and it makes the aforementioned image exposure means 300, 301, 302, 303 a lower position, and it combines the process unit 500, 501, 502, 503 for image formation with a semiconductor laser emitter, and a polygon mirror and ftheta lens by the couple respectively so that it may become an upper position. and the suspension turning around the process unit 500, 501, 502, 503 for image formation -- along with the belt-like imprint object 200 bottom which carried out suspension horizontally to the member 201, 202, it installs like illustration. As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500, 501, 502, 503 for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the lower position and an electrostatic latent image may be formed. Although illustration does not carry out the image exposure means 300, 301, 302, 303 constituted as mentioned above and the process unit 500, 501, 502, 503 for image formation to the guidance attachment components 400, 401, 402, 403, and 404, 405, 406, 407 so that it may be arranged by the vertical couple, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500, 501, 502, 503 for image formation is formed. this abandonment toner bottle 5001 -- the aforementioned cleaning equipment 700 -- the bottom position of some -- and the side of each aforementioned process unit 500, 501, 502, 503 for image formation -- it is prepared in the position. And the abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has

connected with the aforementioned abandonment toner bottle 5001.

http://www4.ipdl.jpo.go.jp/cgi-bin/tran_web.cgi_ejie

[0040] furthermore, the manuscript base 117 is established in this example at the upper part of image formation equipment 121, the exposure section 113 which formed respectively the photo detectors 116, such as the exposure lamp 114 which exposes a manuscript, the optical system 115 including the mirror, and CCD which receives a manuscript image, prepares, and it carries out -- having -- the aforementioned suspension -- it is prepared possible [opening] with the belt-like imprint object 200 to image formation equipment 121 by using the shaft 2011 of a member 201 as a pivot

[0041] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The color manuscript D on the manuscript base 117 is first exposed one by one with the exposure lamp 114, image information is inputted into a photo detector 116 through optical system 115, and the aforementioned image information is further inputted into an input unit 111. Moreover, the electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 500 for image formation which develops a yellow toner (Y) simultaneously, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 300 currently controlled by the picture signal of the aforementioned input unit 111 which next receives the aforementioned image information, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a cyano toner (C) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the toner image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the process unit 503 for image formation at the developer 600, and a black toner (BK) image is formed in the 200th page of a belt-like imprint object by the same operation as the above.

[0042] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of image formation equipment 121, paper is fed with the feed roller 102 which feeds paper to the topmost recording paper P, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1091 as the recording paper PA with the conveyance roller 106 and the delivery roller 107.

[0043] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0044] it is shown in drawing 8 -- as -- this example -- the exposure section 113 and the belt-like imprint object 200 -- suspension -- it can be opened like illustration, being able to use the shaft 2011 of a member 201 as a pivot It becomes possible to open the upper part of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK) by opening centering on this shaft 2011. Toner supply can be easily performed by opening the lid 800 formed in the toner compartment of the developer 600 prepared in the process unit 500,501,502,503 for image formation. Furthermore, in order for 411st page of some photo conductor drums of the aforementioned process unit 500,501,502,503 for image formation to be outside exposed in the aforementioned open operation, as shown in drawing 8, it moved to the exposed surface of the 411st page of a photo conductor drum, and the covering 4111 for photo conductor drums shown in drawing 7 is protected from outdoor daylight. The move method of the covering 4111 for photo conductor drums may prepare the connection member which is interlocked with open operation of the aforementioned exposure section 113 and the belt-like imprint object 200, and operates, or may perform it manually.

[0045] the exposure section 113 in which Manuscript D is exposed, for example in the case of a printer although the composition which opens simultaneously the aforementioned exposure section 113 and the belt-like imprint object 200 was shown in this example -- it is not necessary to prepare -- therefore, suspension -- what is necessary is to open only the belt-like imprint object 200 by using the shaft 2011 of a member 201 as a pivot

[0046] In that case, it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation more simply than the guidance attachment component 401,403,404,406 top, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0047] The abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand is discarded by the common abandonment toner bottle 5001 through the abandonment toner guidance ways L1, L2, L3, L4, and L5.

[0048]

[Effect of the Invention] this invention is installing mutually two or more process units for image formation which have two or more image exposure meanses for color picture formation, an electrification machine and a photo conductor drum, a developer, etc. along with belt-like imprint dignity in a claim 1 as mentioned above. While being able to perform attachment and detachment easily from image formation equipment with toner supply of a developer, without being interrupted with the aforementioned image exposure means Since the image exposure means and the process unit for image formation for yellow, a Magenta, cyanogen, and black can be considered as common composition, the increase in efficiency and manufacturing cost of an assembly can be made cheap.

[0049] Since it is mutually installed along with belt-like imprint dignity, it can detach [when constituting this invention to a reproducing unit / by moving an up **** beam manuscript exposure means outside / with toner supply] two or more aforementioned process units for image formation in a claim 2, and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure

[0050] In a claim 3, it can detach [the aforementioned belt-like imprint object is installed horizontally, and / with toner supply] by installing mutually two or more aforementioned image exposure meanses and two or more process units for image formation along with the belt-like image support dignity of the aforementioned horizontal direction and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

[0051] In claims 4 and 5, it can detach [it inclines in a **** position and the aforementioned belt-like imprint object is arranged, and] two or more process units for image formation by carrying out inclination side-by-side installation of two or more image exposure meanses aforementioned [aforementioned] and two or more process units for image formation by turns along with the belt-like imprint dignity which carried out [aforementioned] the inclination and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

[0052] In a claim 6, since the abandonment toner respectively cleaned by the cleaning equipment of the photo conductor drum prepared in two or more aforementioned process units for image formation and the cleaning equipment of a belt-like imprint object is recoverable with a common recovery means, the maintenance of image formation equipment becomes easy.

[0053] In a claim 7, it can detach [two or more image exposure meanses and two or more process units for image formation are prepared in the lower position of the aforementioned belt-like imprint object, and] with toner supply and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means by opening the aforementioned belt-like imprint object.

[0054] When two or more image exposure meanses and two or more process units for image formation are prepared in the lower position of the aforementioned belt-like imprint object and it carries out to the aforementioned belt-like imprint object and a reproducing unit, it can detach by moving outside the manuscript exposure means prepared in the upper part, / the process unit for image formation is opened wide, and / with toner supply] in a claim 8, and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

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TECHNICAL FIELD

[Industrial Application] While this invention forms a picture in an image support by the process unit for image formation with an image aligner in image formation equipment It is related with the image formation equipment improved with the aforementioned image aligner and the image formation equipment which imprints the picture formed in the aforementioned image support of the process unit for image formation on an imprint object, and imprints the aforementioned picture on the recording paper from this imprint object further in order to make the process unit for image formation detach and attach simply from the aforementioned imprint object.

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PRIOR ART

[Description of the Prior Art] It is respectively arranged in order of an electrification machine, the aligner for latent-image formation, a developer, an imprint machine, and cleaning equipment to the image support which has the shape of a photo conductor of the shape of a belt by which suspension was carried out to the suspension member which can be rotated focusing on two or more image supports (henceforth a photo conductor drum). And the composition which each part material arranged centering on the aforementioned photo conductor drum puts a development counter in order, and is arranged is known for JP,3-77940,U, JP,3-77941,U, etc. With the aforementioned composition, generally it is used for color picture formation, an electrification machine, and a developer and cleaning equipment were constituted from one image formation process unit to the aforementioned photo conductor drum, and, in the case of the printer, the aligner for latent-image formation which built in the polygon mirror, ftheta lens, the reflective mirror, etc. by using a semiconductor laser emitter as the light source is separately prepared in the up position corresponding to the process unit for image formation which has each of this color toner. Furthermore, in the case of the reproducing unit, the manuscript reader is arranged at the upper part of the aforementioned aligner for latent-image formation.

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EFFECT OF THE INVENTION

[Effect of the Invention] By this invention, in a claim 1 by installing mutually two or more process units for image formation which have two or more image exposure meanses for color picture formation, an electrification machine and a photo conductor drum, a developer, etc. along with belt-like imprint dignity as mentioned above Without being interrupted with the aforementioned image exposure means, while being able to perform attachment and detachment easily from image formation equipment with toner supply of a developer, the image exposure means and the process unit for image formation for yellow, a Magenta, cyanogen, and black can be considered as common composition. Therefore, the increase in efficiency and manufacturing cost of an assembly can be made cheap.

[0049] Since it is mutually installed along with belt-like imprint dignity, it can detach [when constituting this invention to a reproducing unit / by moving an up **** beam manuscript exposure means outside / with toner supply] two or more aforementioned process units for image formation in a claim 2, and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

[0050] In a claim 3, it can detach [the aforementioned belt-like imprint object is installed horizontally, and / with toner supply] by installing mutually two or more aforementioned image exposure meanses and two or more process units for image formation along with the belt-like image support dignity of the aforementioned horizontal direction and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

[0051] In claims 4 and 5, it can detach [it inclines in a **** position and the aforementioned belt-like imprint object is arranged, and] two or more process units for image formation by carrying out inclination side-by-side installation of two or more image exposure meanses aforementioned [aforementioned] and two or more process units for image formation by turns along with the belt-like imprint dignity which carried out [aforementioned] the inclination and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

[0052] In a claim 6, since the abandonment toner respectively cleaned by the cleaning equipment of the photo conductor drum prepared in two or more aforementioned process units for image formation and the cleaning equipment of a belt-like imprint object is recoverable with a common recovery means, the maintenance of image formation equipment becomes easy.

[0053] In a claim 7, it can detach [two or more image exposure meanses and two or more process units for image formation are prepared in the lower position of the aforementioned belt-like imprint object, and] with toner supply and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means by opening the aforementioned belt-like imprint object.

[0054] When two or more image exposure meanses and two or more process units for image formation are prepared in the lower position of the aforementioned belt-like imprint object and it carries out to the aforementioned belt-like imprint object and a reproducing unit, it can detach by moving outside the manuscript exposure means prepared in the upper part, / the process unit for image formation is opened wide, and / with toner supply] in a claim 8, and attach from image formation equipment easily, without being interrupted with the aforementioned image exposure means.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] When supplying a toner to the developer in each process unit for image formation, no image formation equipment constituted as mentioned above moves to the side the image aligner for latent-image formation prepared in the upper part of the process unit for image formation from an up position, opens the opening of the toner of the aforementioned developer wide, and if there is, it does not have an oak. Moreover, when detaching and attaching the process unit for image formation from the main part of image formation equipment by exchange of a photo conductor drum etc., it is necessary to move the image aligner for the aforementioned latent-image formation like the above, or to remove. Then, when exposing a photo conductor drum by the image aligner for the aforementioned latent-image formation, in order to make image formation of an image formation side exact, it is constituted so that strict alignment can be performed. If the image aligner for the aforementioned latent-image formation is moved from image formation equipment as mentioned above or it is removing, an error will arise in alignment, the focus of a picture goes wrong, and it becomes impossible however, to form an exact picture. Furthermore, doing the work which moves the aforementioned aforementioned aligner for latent-image formation at the time of the above toner supply of a developer and exchange of a photo conductor drum, or is removed must interrupt record or copy work for a long time, and it reduces the efficiency of record or copy work remarkably.

[0004] this invention is considered especially in order to improve the aforementioned fault. That is, they are also the purpose and the bottom about making easy exchange of the process unit for image formation which built exchange of each image aligner, a photo conductor drum, a developer, etc. in the image support which formed respectively the process unit for image formation which built in the image aligner for latent-image formation, a photo conductor drum, a developer, etc. in the shape of a belt by carrying out side-by-side installation arrangement, and supply of a toner.

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3. In the drawings, any words are not translated.

MEANS

[Means for Solving the Problem] In a claim 1, it has two or more image exposure meanses, this image exposure means, and two or more process units for image formation installed by turns for the aforementioned purpose. Two or more image exposure meanses, The toner image respectively formed in the aforementioned image support by the image formation process unit In the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture It prepared so that it might detach and attach in the direction which estranges two or more aforementioned image formation process units from image formation equipment to the aforementioned imprint object to the imprint object formed in the shape of [aforementioned] a belt when detaching and attaching two or more aforementioned process units for image formation. It prepared so that two or more aforementioned image exposure meanses and the upper part of two or more image formation process units might be opened wide and two or more of these image formation process units might be estranged to the aforementioned imprint object by having enabled movement of the manuscript reader prepared in the aforementioned image formation equipment from the aforementioned image formation position in the claim 2. In the claim 3, the imprint object formed in the shape of [aforementioned] a belt was horizontally stretched by the suspension member, and two or more aforementioned image exposure meanses and two or more image formation process units were prepared in accordance with the aforementioned imprint object. It is a bird clapper from the imprint object formed in the claim 4 in the shape of [which was stretched to abbreviation lengthwise by the aforementioned suspension member / aforementioned] a belt, two or more image exposure meanses arranged in accordance with the aforementioned imprint object lengthwise, and two or more image formation process units. It is a bird clapper from the imprint object formed in the shape of [which was inclined and stretched by the aforementioned suspension member in the claim 5 / aforementioned] a belt, two or more image exposure meanses by which inclination arrangement was carried out in accordance with the aforementioned imprint object, and two or more image formation process units. In a claim 6, it has two or more process units for image formation which installed two or more image exposure meanses and this image exposure means by turns. Two or more image exposure meanses, The toner image respectively formed in the aforementioned image support by the image formation process unit A cleaning means to clean the image support of two or more aforementioned process units for image formation in the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture, Have a cleaning means to clean the aforementioned imprint object formed in the shape of a belt, and a common recovery means to collect the toners cleaned by the aforementioned cleaning means after imprinting the aforementioned toner picture. In a claim 7, it has two or more image exposure meanses, this image exposure means, and the process unit for image formation installed by turns. Two or more image exposure meanses, The toner image respectively formed in the aforementioned image support by the aforementioned process unit for image formation While arranging in the image formation equipment which lays on top of the imprint object formed in the shape of a belt one by one, and is imprinted on the recording paper after forming a picture in the lower position of the imprint object which formed two or more aforementioned process units for image formation in the shape of [aforementioned] a belt Movement of the imprint object formed in the shape of [which carried out suspension by the suspension member / aforementioned] a belt was enabled from the image formation position, and two or more aforementioned process units for image formation were made removable at least than image formation equipment. In the claim 8, the aforementioned imprint object was made movable with the manuscript reader prepared in image formation equipment, and two or more aforementioned process units for image formation were made removable at least than image formation equipment. In a claim 9, two or more aforementioned process units for image formation should be process units for color picture formation. In a claim 10, two or more aforementioned image exposure meanses and two or more image formation process units are attained by being respectively held by the guidance maintenance means prepared in image formation equipment in the predetermined position.

[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

EXAMPLE

[Example] The example of this invention is explained using drawing with the operation.

[0007] Drawing 1 is one example of this invention, for example, shows the image formation equipment 100 of a color printer. In order for 300,301,302,303 to be a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively and to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK) in drawing, the process unit 500,501,502,503 for image formation is formed so that it may install with the aforementioned image exposure means 300,301,302,303. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- in accordance with the belt-like imprint object 200 which carried out suspension horizontally to the member 201,202, it installs by turns like illustration and prepares As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that it may be installed by the photo conductor drum 411, and may be exposed from the image exposure means 300 and an electrostatic latent image may be formed. By the guidance attachment components 400 and 401,402,403,404, although the aforementioned image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500,501,502,503 for image formation is formed. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0008] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 503 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a cyano toner (C) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the Magenta toner image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the developer 600 and the aforementioned process unit 500 for image formation forms a black toner (BK) image in the 200th page of a belt-like imprint object by the same operation as the above.

[0009] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- reversal operation -- carrying out -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of the aforementioned abandonment toner bottle 5001, paper is fed with the feed roller 102 which feeds paper to the topmost recording paper P, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104

[0010] Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 109 as the recording paper PA with the conveyance roller 106 and the delivery roller 107.

[0011] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0012] Moreover, the aforementioned delivery tray 109 is formed possible [opening] by the pivot 110 prepared in some image formation equipments 100, and it is opening this delivery tray 109, and it becomes possible to open the upper part of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). Toner supply can be easily performed by opening the lid 800 formed in the toner compartment of the developer 600 prepared in the process unit 500,501,502,503 for image formation. Furthermore, it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation simply through the guidance attachment component 401,402,403,404, for example, exchange, cleaning, etc. of the repair at the

time of failure or the photo conductor drum 411 can be performed quickly.

http://www4.ipdl.jpo.go.jp/cgi-bin/tran_web.cgi_ejie

[0013] The abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand is discarded by the common abandonment toner bottle 5001 through the abandonment toner guidance ways L1, L2, L3, L4, and L5.

[0014] Drawing 2 is one example of this invention, for example, shows the image formation equipment 112 of a reproducing unit. Like drawing 1, 300,301,302,303 is a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively, and in order to perform development of yellow (Y), a Magenta (M), cyanogen (C), and black (BK), the process unit 500,501,502,503 for image formation is formed so that it may install with the aforementioned image exposure means 300,301,302,303. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- in accordance with the belt-like imprint object 200 which carried out suspension horizontally to the member 201,202, it installs by turns like illustration and prepares As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that it may be installed by the photo conductor drum 411, and may be exposed from the image exposure means 300 and an electrostatic latent image may be formed. By the guidance attachment components 400 and 401,402,403,404, although the image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500,501,502,503 for image formation is formed. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0015] Furthermore, the exposure section 113 which established the manuscript base 117 in this example at the upper part of image formation equipment 112, and formed respectively the photo detectors 116, such as the exposure lamp 114 which exposes a manuscript, the optical system 115 including the mirror, and CCD which receives a manuscript image, prepares, is carried out, and is prepared possible [opening] by the pivot 1131 by the end of image formation equipment 112.

[0016] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The color manuscript D on the manuscript base 117 is first exposed one by one with the exposure lamp 114, image information is inputted into a photo detector 116 through optical system 115, and the aforementioned image information is further inputted into an input unit 111. Moreover, the electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 503 for image formation which develops a yellow toner (Y) simultaneously, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 currently controlled by the picture signal of the aforementioned input unit 111 which next receives the aforementioned image information, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 501,500 for image formation which has a cyano toner (C) and a black toner (BK) by image information by the operation as the above that next it is the same, A black toner (BK) image is imprinted by heavy doubling ***** 203 so that it may agree in the toner image formed in the aforementioned belt-like imprint object 200. In addition, it is cleaned with cleaning equipment 700 one by one with the photo conductor drum 411 which ended the imprint of a picture on the aforementioned belt-like imprint object 200.

[0017] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- reversal operation -- carrying out -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassettes C, C1, and C2 having the recording papers P, P1, and P2 are formed in the lower position of the aforementioned abandonment toner bottle 5001. Paper is fed with the feed rollers 102, 1021, and 1022 which feed paper to the topmost recording papers P, P1, and P2 according to the size of Manuscript D, and the size of hope. As for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arresters 1032, 1033, and 1034 at the detail-paper-guide section 108. the aforementioned recording paper once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1091 as the recording paper PA with the conveyance roller 106 and the delivery roller 107.

[0018] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0019] this example is opening the exposure section 113 focusing on a pivot 1131, and it becomes possible to open the upper part of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). Toner supply can be easily performed by opening the lid 800 formed in the toner compartment of the developer 600 prepared in the process unit 500,501,502,503 for image formation. furthermore -- ** -- it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation simply through the guidance attachment component 401,402,403,404, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly

[0020] The abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand is discarded by the common abandonment toner bottle 5001 through the abandonment toner guidance ways L1, L2, L3, L4, and L5.

[0021] Drawing 3 is what formed the Light Emitting Diode emitter 3001 as an image exposure means 300, and when detaching and attaching

image exposure means 300 main part which formed [the end of the Light Emitting Diode emitter 3001 was prepared free of rotation with the shaft 3002 to image exposure means 300 main part, and fixed / towards the 411st page of a photo conductor drum / at the time of use like illustration] the process unit 500 for image formation, or the Light Emitting Diode emitter 3001 to image formation equipment 100, it is contained in the position of an alternate long and short dash line.

[0022] Drawing 4 is other one example of this invention, for example, shows the image formation equipment 118 of a color printer. the suspension to which especially this invention rotates the image exposure means 300,301,302,303 and the process unit 500,501,502,503 for image formation -- it inclines to a member 201,202, and in accordance with the belt-like imprint object 200 which carried out suspension, it inclines by turns like illustration, and is installed in lengthwise side by side in piles Like drawing 1 , 300,301,302,303 is a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively, and in order to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK), the process unit 500,501,502,503 for image formation is formed so that it may incline with the aforementioned image exposure means 300,301,302,303 and may install. As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the upper position and an electrostatic latent image may be formed. By the guidance attachment components 400, 401, 402, 403, 404, and 405,406,407,408, although the aforementioned image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position, and it lays and maintenance fixation of them is carried out.

[0023] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200 which carried out inclination arrangement. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 500 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 300 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image and black toner (BK) image which were formed in the photo conductor drum 411 of the process unit 501,503 for image formation which has a cyano toner (C) and a black toner (BK) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the Magenta toner (M) image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the developer 600 and the aforementioned process unit 503 for image formation forms a black toner (BK) image in the 200th page of a belt-like imprint object by the same operation as the above.

[0024] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of image formation equipment 118, paper is fed with the feed roller 102 which feeds paper to the topmost recording paper P, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1181 as the recording paper PA with the delivery roller 107.

[0025] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, it is reversed, and a new picture imprint is performed.

[0026] Moreover, the open door 1182 is formed in some image formation equipments 118 possible [opening] by the pivot 1183, and it becomes possible to open the side of the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). It is possible to supply the aforementioned toner to the process unit 500,501,502,503 for image formation by which inclination arrangement was carried out in the arranged position. Furthermore, a toner compartment can be wide opened by pulling out a developer 600 and the aforementioned process unit 500,501,502,503 for image formation along with the aforementioned guidance attachment component 402,404,406,408, and toner supply can be performed easily. Furthermore, it is possible to guide the aforementioned process unit 500,501,502,503 for image formation by the guidance attachment components 401, 402, 403, 404, and 405,406,407,408, and to detach and attach it simply, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0027] Moreover, this example carried out inclination arrangement of the belt-like imprint object 200, and since it had arranged cleaning equipment 701 using this inclination, it has improved the cleaning performance sharply.

[0028] Drawing 5 is other one example of this invention, for example, shows the image formation equipment 119 of a color printer. In order for 300,301,302,303 to be a semiconductor laser emitter, a polygon mirror and ftheta lens, and the image exposure means that built in the reflective mirror respectively and to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK) in drawing, the process unit 500,501,502,503 for image formation is formed in the aforementioned image exposure means 300,301,302,303 and lengthwise. and the aforementioned image exposure means 300,301,302,303 and the suspension turning around the process unit 500,501,502,503 for image formation -- it is prepared by turns in the state where it put in accordance with the belt-like imprint object 200 which carried out suspension to lengthwise to the member 201,202 As the process unit 500 for image formation shows like drawing 1 , along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503

for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the upper part and an electrostatic latent image may be formed. By the guidance attachment components 400, 401, 402, 403, 404, and 405, 406, 407, 408, although the aforementioned image exposure means 300, 301, 302, 303 constituted as mentioned above and the process unit 500, 501, 502, 503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500, 501, 502, 503 for image formation is formed in the lower position of image formation equipment 119. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0029] A color picture is formed with the image exposure means 300, 301, 302, 303 constituted as mentioned above, and the process unit 500, 501, 502, 503 for image formation and the belt-like imprint object 200. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 503 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a cyano toner (C) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the Magenta toner (M) image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the aforementioned process unit 500 for image formation at the developer 600, and a black toner (BK) image is formed in the 200th page of a belt-like imprint object by the same operation as the above.

[0030] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201, 202 -- moving -- a color picture -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the upper position of image formation equipment 119, paper is fed to the topmost recording paper P with the feed roller 102, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1191 as the recording paper PA with the delivery roller 107.

[0031] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0032] Moreover, the open door 1192 is formed in some aforementioned image formation equipments 119 possible [opening] by the pivot 1191, and it becomes possible by opening this open door 1192 to open the upper part about the process unit 500, 501, 502, 503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). The process unit 500, 501, 502, 503 for image formation can be made to be able to show around by the guidance attachment component 402, 404, 406, 408, it can pull out to the side, and toner supply can be performed easily [the toner compartment of a developer 600]. Furthermore, it is possible to detach and attach the aforementioned process unit 500, 501, 502, 503 for image formation simply through the guidance attachment components 401, 402, 403, and 404, 406, 407, 408 separately, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0033] Drawing 6 discarded by the common abandonment toner bottle 5001 which formed the abandonment toner discharged from the aforementioned cleaning equipment 700, 701 on the other hand in the lower position of image formation equipment 119 through the abandonment toner guidance ways L1, L2, L3, L4, and L5 is other one example of this invention, for example, the image formation equipment 120 of a color printer is shown. In order for 300, 301, 302, 303 to be a semiconductor laser emitter, a polygon mirror and theta lens, and the image exposure means that built in the reflective mirror respectively and to perform development for yellow (Y), a Magenta (M), cyanogen (C), and black (BK) in drawing, the process unit 500, 501, 502, 503 for image formation is formed in the aforementioned image exposure means 300, 301, 302, 303 and lengthwise like drawing 5 . and the aforementioned image exposure means 300, 301, 302, 303 and the suspension turning around the process unit 500, 501, 502, 503 for image formation -- it is prepared by turns in the state where it put in accordance with the belt-like imprint object 200 which carried out suspension to lengthwise to the member 201, 202 As the process unit 500 for image formation shows like drawing 1 , along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500, 501, 502, 503 for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the upper part and an electrostatic latent image may be formed. By the guidance attachment components 400, 401, 402, 403, 404, and 405, 406, 407, 408, although the aforementioned image exposure means 300, 301, 302, 303 constituted as mentioned above and the process unit 500, 501, 502, 503 for image formation do not carry out illustration, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation of them is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500, 501, 502, 503 for image formation is formed in the lower position of image formation equipment 119. The abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0034] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The electrification machine 900 gives a charge to the 411st page of the photo conductor drum in the process unit 500 for image formation which develops a yellow toner (Y) first, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 303 controlled by the picture signal of the input unit 111 which next receives an external picture signal, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 502,503 for image formation which has a cyano toner (C) and a black toner (BK) by image information by the operation as the above that next it is the same, A black toner (BK) image is imprinted by heavy doubling ***** 203 so that it may agree in the toner image formed in the aforementioned belt-like imprint object 200.

[0035] Furthermore, the black toner (BK) is contained by the aforementioned process unit 500 for image formation at the developer 600, and a black toner (BK) image is formed in the 200th page of a belt-like imprint object by the same operation as the above.

[0036] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201,202 -- moving -- a color picture -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of image formation equipment 119, paper is fed to the topmost recording paper P with the feed roller 102, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper P once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1191 as the recording paper PA with the delivery roller 107.

[0037] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0038] Moreover, the open door 1202 is formed in some aforementioned image formation equipments 120 possible [opening] by the pivot 1203, and it becomes possible by opening this open door 1202 to open the upper part about the process unit 500,501,502,503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK). The process unit 500,501,502,503 for image formation can be made to be able to show around by the guidance attachment component 402,404,406,408, it can pull out to the side, and toner supply can be performed easily [the toner compartment of a developer 600]. Furthermore, it is possible to detach and attach the aforementioned process unit 500,501,502,503 for image formation simply through the guidance attachment components 401, 402, 403, and 404,406,407,408 separately, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0039] Drawing 7 discarded by the common abandonment toner bottle 5001 which formed the abandonment toner discharged from the aforementioned cleaning equipment 700,701 on the other hand in the lower position of image formation equipment 120 through the abandonment toner guidance ways L1, L2, L3, L4, and L5 is other examples of this invention, for example, the image formation equipment 121 of a reproducing unit is shown. Like drawing 1, in order to perform development of yellow (Y), a Magenta (M), cyanogen (C), and black (BK), 300,301,302,303 is the image exposure means which built in the reflective mirror respectively, and it makes the aforementioned image exposure means 300,301,302,303 a lower position, and it combines the process unit 500,501,502,503 for image formation with a semiconductor laser emitter, and a polygon mirror and fiheta lens by the couple respectively so that it may become an upper position. and the suspension turning around the process unit 500,501,502,503 for image formation -- along with the belt-like imprint object 200 bottom which carried out suspension horizontally to the member 201,202, it installs like illustration As the process unit 500 for image formation shows, along with the hand of cut of the photo conductor drum 411 and this photo conductor drum 411, the electrification machine 900, the developer 600 equipped with the toner supply section, the imprint machine 203, and cleaning equipment 700 are formed respectively, and the aforementioned process unit 500,501,502,503 for image formation is constituted so that the photo conductor drum 411 may be exposed from the image exposure means 300 prepared in the lower position and an electrostatic latent image may be formed. Although illustration does not carry out the image exposure means 300,301,302,303 constituted as mentioned above and the process unit 500,501,502,503 for image formation to the guidance attachment components 400, 401, 402, 403, and 404,405,406,407 so that it may be arranged by the vertical couple, by height material, the pin, etc., it shows around in a predetermined position and maintenance fixation is carried out. Furthermore, the abandonment toner bottle 5001 which holds the abandonment toner after cleaning the photo conductor drum in each aforementioned process unit 500,501,502,503 for image formation is formed. this abandonment toner bottle 5001 -- the aforementioned cleaning equipment 700 -- the bottom position of some -- and the side of each aforementioned process unit 500,501,502,503 for image formation -- it is prepared in the position And the abandonment toner guidance way L5 was respectively formed from other cleaning equipments with the aforementioned cleaning equipment 700 rather than the abandonment toner guidance ways L1, L2, L3, and L4 and the cleaning equipment 701 formed in the aforementioned belt-like imprint object 200, and it has connected with the aforementioned abandonment toner bottle 5001.

[0040] furthermore, the manuscript base 117 is established in this example at the upper part of image formation equipment 121, the exposure section 113 which formed respectively the photo detectors 116, such as the exposure lamp 114 which exposes a manuscript, the optical system 115 including the mirror, and CCD which receives a manuscript image, prepares, and it carries out -- having -- the aforementioned suspension -- it is prepared possible [opening] with the belt-like imprint object 200 to image formation equipment 121 by using the shaft 2011 of a member 201 as a pivot

[0041] A color picture is formed with the image exposure means 300,301,302,303 constituted as mentioned above, and the process unit 500,501,502,503 for image formation and the belt-like imprint object 200. The color manuscript D on the manuscript base 117 is first exposed one by one with the exposure lamp 114, image information is inputted into a photo detector 116 through optical system 115, and the

the aforementioned image information is further inputted into an input unit 111. Moreover, the electrification machine 200 gives a charge to the 411st page of the photo conductor drum in the process unit 500 for image formation which develops a yellow toner (Y) simultaneously, an electrostatic latent image is formed in the 411st page of a photo conductor drum with the image exposure means 300 currently controlled by the picture signal of the aforementioned input unit 111 which next receives the aforementioned image information, and the development of a yellow toner (Y) is started by the developer 600. Simultaneously, the aforementioned belt-like imprint object 200 also starts movement in the direction of an arrow, on the aforementioned belt-like imprint object 200, the imprint machine 203 is used and the yellow toner (Y) image formed in the 411st page of the aforementioned photo conductor drum is imprinted. Next, the Magenta toner (M) image formed in the photo conductor drum 411 of the process unit 501 for image formation which has a Magenta toner (M) by image information by the same operation as the above It imprints by heavy doubling ***** 203 so that it may agree in the yellow toner (Y) image formed in the aforementioned belt-like imprint object 200. Furthermore, the cyano toner (C) image formed in the photo conductor drum 411 of the process unit 502 for image formation which has a cyano toner (C) by image information by the operation as the above that next it is the same It imprints by heavy doubling ***** 203 so that it may agree in the toner image formed in the aforementioned belt-like imprint object 200. Furthermore, the black toner (BK) is contained by the process unit 503 for image formation at the developer 600, and a black toner (BK) image is formed in the 200th page of a belt-like imprint object by the same operation as the above.

[0042] the suspension which the color picture by the color toner is formed in the 200th page of the aforementioned belt-like imprint object in the above operation, and the belt-like imprint object 200 rotates -- a member 201, 202 -- a recording paper imprint -- a member -- it moves in the 104 direction On the other hand, the feed cassette C having the recording paper P is formed in the lower position of image formation equipment 121, paper is fed with the feed roller 102 which feeds paper to the topmost recording paper P, and, as for the recording paper P, guidance conveyance of one sheet of recording paper P is certainly carried out by the **** arrester 103 at the detail-paper-guide section 108. the aforementioned recording paper once stops with the resist roller 1031, and it agrees with the color picture formed in the 200th page of a belt-like imprint object -- as -- feeding -- starting -- the aforementioned recording paper imprint -- a color picture is imprinted on the recording paper P by the member 104 Next, after the recording paper P is conveyed by heat fixing equipment 105 and fixed to the recording paper P in the aforementioned color picture, it is delivered to the delivery tray 1091 as the recording paper PA with the conveyance roller 106 and the delivery roller 107.

[0043] After imprinting a color picture, the 200th page of a belt-like imprint object is cleaned with cleaning equipment 701, and a new picture imprint is performed.

[0044] it is shown in drawing 8 -- as -- this example -- the exposure section 113 and the belt-like imprint object 200 -- suspension -- it can be opened like illustration, being able to use the shaft 2011 of a member 201 as a pivot It becomes possible to open the upper part of the process unit 500, 501, 502, 503 for image formation which contained the aforementioned yellow toner (Y), the Magenta toner (M), the cyano toner (C), and the black toner (BK) by opening centering on this shaft 2011. Toner supply can be easily performed by opening the lid 800 formed in the toner compartment of the developer 600 prepared in the process unit 500, 501, 502, 503 for image formation. Furthermore, in order for 411st page of some photo conductor drums of the aforementioned process unit 500, 501, 502, 503 for image formation to be outside exposed in the aforementioned open operation, as shown in drawing 8, it moved to the exposed surface of the 411st page of a photo conductor drum, and the covering 4111 for photo conductor drums shown in drawing 7 is protected from outdoor daylight. The move method of the covering 4111 for photo conductor drums may prepare the connection member which is interlocked with open operation of the aforementioned exposure section 113 and the belt-like imprint object 200, and operates, or may perform it manually.

[0045] the exposure section 113 in which Manuscript D is exposed, for example in the case of a printer although the composition which opens simultaneously the aforementioned exposure section 113 and the belt-like imprint object 200 was shown in this example -- it is not necessary to prepare -- therefore, suspension -- what is necessary is to open only the belt-like imprint object 200 by using the shaft 2011 of a member 201 as a pivot

[0046] In that case, it is possible to detach and attach the aforementioned process unit 500, 501, 502, 503 for image formation more simply than the guidance attachment component 401, 403, 404, 406 top, for example, exchange, cleaning, etc. of the repair at the time of failure or the photo conductor drum 411 can be performed quickly.

[0047] The abandonment toner discharged from the aforementioned cleaning equipment 700, 701 on the other hand is discarded by the common abandonment toner bottle 5001 through the abandonment toner guidance ways L1, L2, L3, L4, and L5.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The whole image formation equipment block diagram used for the printer of this invention.

[Drawing 2] The whole image formation equipment block diagram used for the reproducing unit of this invention.

[Drawing 3] The block diagram showing an example of the process unit for image formation with the image exposure means of this invention.

[Drawing 4] The whole image formation equipment block diagram used for the printer in other examples of this invention.

[Drawing 5] The whole image formation equipment block diagram used for the printer in other examples of this invention.

[Drawing 6] The whole image formation equipment block diagram used for the printer in other examples of this invention.

[Drawing 7] The whole image formation equipment block diagram used for other reproducing units of this invention.

[Drawing 8] The whole image formation equipment block diagram to which the belt-like imprint object and the exposure section in drawing 7 were moved.

[Description of Notations]

100, 112, 118, 119, 120, 121 Image formation equipment

104 Recording Paper Imprint -- Member

200 Belt-like Imprint Object

203 Imprint Machine

300, 301, 302, 303 Image aligner

411 Photo Conductor Drum

500, 501, 502, 503 Process unit for image formation

600 Developer

700, 701 Cleaning equipment

800 Lid

900 Electrification Machine

5001 Abandonment Toner Bottle

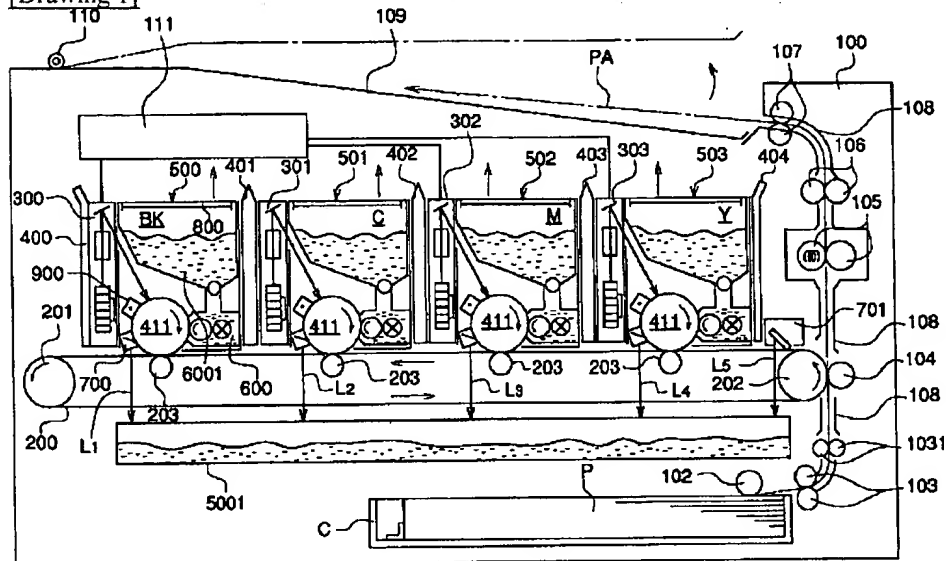
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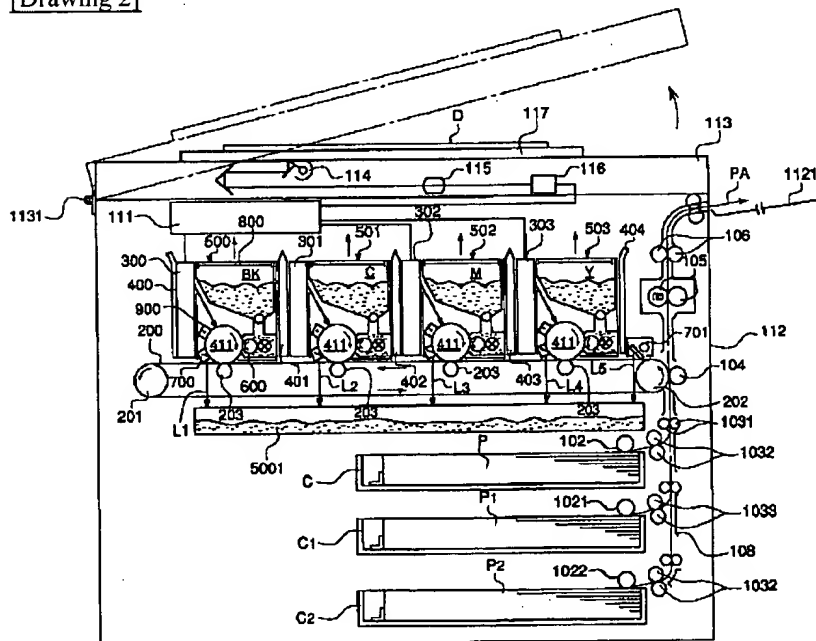
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DRAWINGS

[Drawing 1]



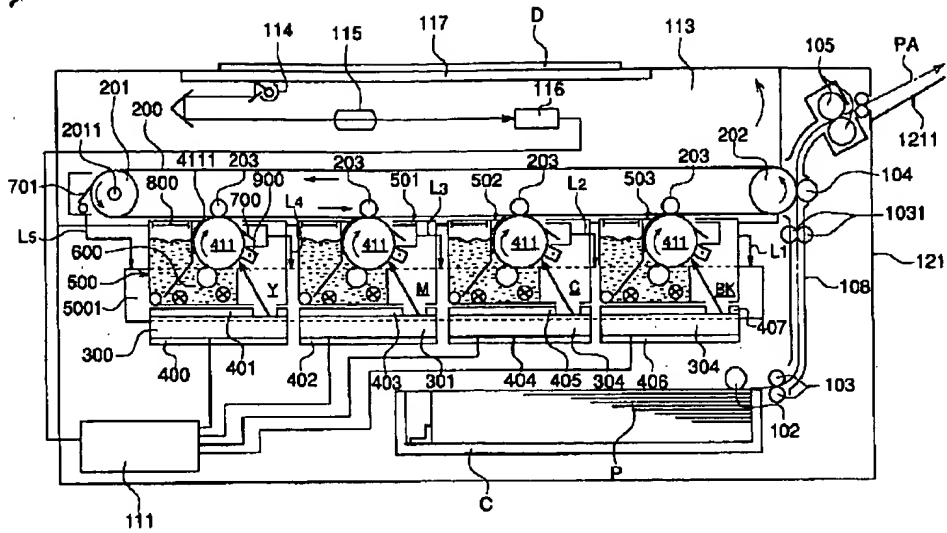
[Drawing 2]



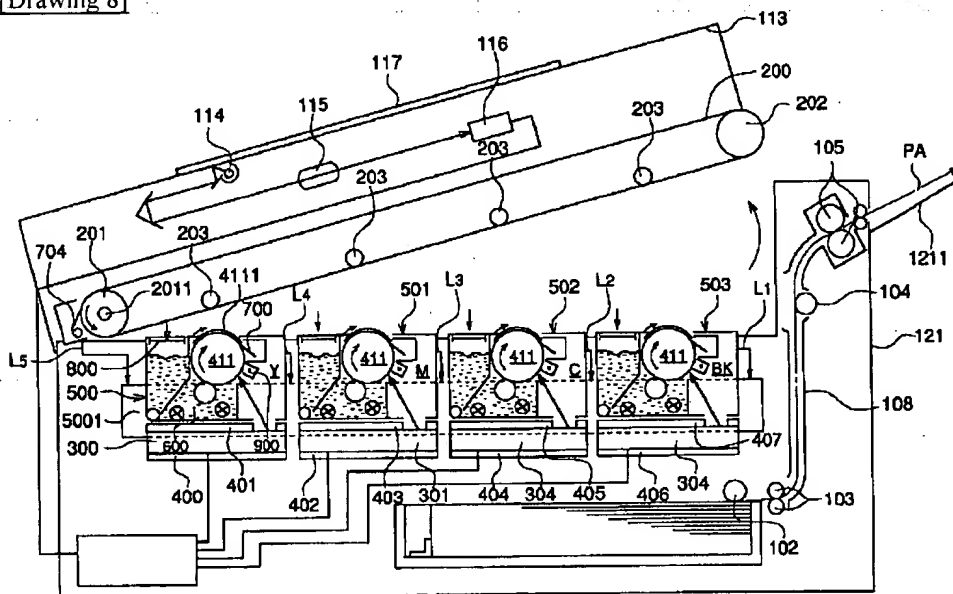
[Drawing 3]

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[Drawing 7]



[Drawing 8]



[Translation done.]